Development of a Nuclear Engineering Track for Undergraduate Students in Mechanical Engineering Technology

Executive Summary

The recent merger of the College of Engineering with the College of Applied Sciences in the fall of 2009 introduced a unique opportunity to address manpower needs expressed by the nuclear power industry for new employees who had training at the baccalaureate level in mechanical and nuclear engineering rather than an advanced M.S. or Ph.D. degree. The University of Cincinnati's Nuclear and Radiological Engineering (NRE) program faculty has been approved by the University of Cincinnati's College of Engineering and Applied Sciences (CEAS) to offer a new track in nuclear engineering consisting of a series of technical elective courses for undergraduate engineering technology students. Approval of the Nuclear Engineering (NE) track continues the long history of nuclear engineering at the University of Cincinnati and is a creative response to the resurgence in interest on the part of students in nuclear energy. The NRE program faculty will continue to offer graduate courses in Nuclear and Radiological Engineering for M.S. and Ph.D. students as well as continue a long history of conducting externally funded research as part of the graduate training program.

The Nuclear Curriculum Development Grant Program will support creation of two new courses in the NE track in which course content has greater emphasis on application than theory, utilizing digital resources to augment course content, and offer an optional alternative to the traditional classroom and laboratory setting. The two new courses are: 1) "Fundamentals of Nuclear Engineering" and 2) "Nuclear Reactor Engineering and Safety." All engineering technology students are required to complete six technical elective courses for graduation. NE track courses are strategically targeted towards Mechanical Engineering Technology (MET) students since they are also required to take courses in Heat Transfer, Thermodynamics, and Fluid Dynamics, which are also courses required in a traditional nuclear engineering program. Thus, MET students will be adequately prepared for the study of nuclear energy systems. Students in other engineering disciplines are also eligible to take courses in the NE track. Ultimately, six courses will be offered in the NE track. Seniors may also take dual-level graduate courses offered by the NRE faculty for undergraduate credit in the NE track.

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